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UNITED STATES DEPARTMENT OF COMMERCE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/262,000	03/05/99	KONG	CS98-076

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EXAMINER

VOCKRODT, J

ART UNIT

PAPER NUMBER

2822

DATE MAILED:

08/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/262,000

Applicant(s)

KONG ET AL.

Examiner

Jeff Vockrodt

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-32 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-32 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This office action is in response to the amendment filed May 25, 2001.

Claims 1-2, 4-32, and 34 are pending. The previous amendment cancelled claim 3, however, Applicant's remarks suggest that claim 34 was intended to be cancelled instead of claim 3.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong (US 6,027,999) in view of Haskell et al (US 6,252,999)

Wong teaches a method of pad definition to achieve a highly reflective plate without affecting bondability. Wong teaches a monocrystalline silicon substrate 10 having semiconductor device structures formed therein. Insulating material alignment posts are formed over the semiconductor device structures comprising a multilayer passivation film of silicon oxide 44 and silicon nitride 46. Wong does not teach choosing the thickness' of silicon oxide 44 and silicon nitride 46 such that the passivation layer also functions as an multilayer optical interference layer. Haskell et al teach adjusting the thickness' of a silicon oxide layer 414 and an etch resistant cap nitride layer 416 to form an optical thin film layer that optimizes the reflective

performance of the pixel mirrors 408. It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the thickness' of the oxide layer and nitride passivation layer taught by Wong to function as a multilayer optical interference material, because it was well known and desirable to optimize the thickness' of insulating materials on a pixel to increase reflectivity as taught by Haskell et al.

In re claim 5, the total thickness is 1500 angstroms, Haskell et al, col. 4, ll. 44-47.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong and Haskell et al in view of Lee (US 4,827,870).

Wong and Haskell et al teach the device as applied to claims 1-2 and 5-6 above, but do not teach forming the optical interference layers using PECVD. Lee teaches that PECVD is the preferred method of coating optical interference layers of silicon oxide which allows for uniformity tolerances within a few percent of the wavelength of visible light (col. 2, ll. 6-12). It would have been obvious to one of ordinary skill in the art at the time of the invention to use PECVD to form the layer 321 in the method taught by Wong and Haskell et al to form a layer with enhanced uniformity tolerances as taught by Lee.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong and Haskell et al in view of Sato et al (US 5,379,139).

Wong and Haskell et al teach the device as applied to claims 1-2 and 5-6 above, but do not teach a thickness of the alignment post from 0.3-5 microns. Sato et al show a LCD apparatus having a liquid crystal cell thickness of 2.5 microns (col. 3, ll. 23-26) is

suitable for ferroelectric liquid crystal devices. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thickness of the alignment post taught by Wong and Haskell et al so that the liquid crystal cell thickness is 2.5 microns because this is a suitable thickness for ferroelectric liquid crystal devices as taught by Sato et al.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al (US 6,051,446) in view of Wright et al (US 5,801,800).

Moore et al teach the a device, but does not teach bonding pads on the silicon body having wires attached and connected to external contacts for the control logic and power and the glass cover not over the bonding pads. Wright et al show bond pads 26 at the periphery of the LCD array for connecting to external circuits. It would have been obvious to one of ordinary skill in the art at the time of the invention to include bond pads at the periphery of the LCD array in the device taught by Moore et al, so that the LCD could be connected to outside circuitry as taught by Wright et al.

Allowable Subject Matter

Claims 8-32 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Vockrodt whose telephone number is (703) 306-9144. The examiner can normally be reached on Monday through Friday, from 9:30 Am to 3:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (703) 308-4940. The fax phone number for this Group is (703) 305-3432 or (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

August 3, 2001



CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
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